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Editorial Comment

DOCTOR HARVEY DEE BROWN —MARTYR

ANOTHER heroic figure is lost to the Anti - Tuberculosis Crusaders of America. When ordered to rest by his physicians, a cot was brought to his office and his work was continued therefrom. Laboring under tremendous physical handicap, his self-sacrificing devotion to the anti-tuberculosis cause continued to the end. A Doctor of Philosophy, he was a stimulating example to Doctors of Medicine in the Tuberculosis fight.

A native of New York State, Doctor Brown was graduated from the University of Rochester and received the degree of Doctor of Philosophy in the work of psychology from the Illinois Wesleyan University. His first tuberculosis work was on the staff of the Anti-Tuberculosis Society of Wisconsin, and later he served on the Health Education staff of the Extension Division of the University of Wisconsin.

For eight years Doctor Brown was connected with the New York State Charities Aid Association. During four of those years he directed the Christmas Seal sale in the state outside of New York City. He was active in the work of the Community Church in New York and was director of its Social Service League.

Doctor Brown was outstanding among the tuberculosis workers in this Country. Coming to Philadelphia following periods of valuable service in Wisconsin and New York, he brought to the Health Council and Tuberculosis Committee extraordinary ability, knowledge and experience. This was all reflected in the comprehensive and constructive program of tuberculosis prevention activities of the Philadelphia organization.

In addition to giving service of high rank in his position here, he served as President and member of committees of the National Conference of Tuberculosis Secretaries and on the Board of Directors and various committees of the National Tuberculosis Association. In these capacities he served to an important extent the entire voluntary tuberculosis movement in the United States.

Doctor Brown was intensely interested in the economic and social as well as the public health and administrative aspects of the problem of tuberculosis prevention and control. His interest and work were influenced by high ideals and sincere devotion to the cause which he served during much of his life.

Arthur M. Dewees, Secretary of the Pennsylvania Tuberculosis Society, who worked in close co-operation with Doctor Brown for many years said, "Doctor Brown was outstanding among the hun-

dreds of lay and professional men and women in this Country who have devoted their lives to the crusade against tuberculosis. He was a crusader for human betterment by inheritance and by personal inclination and choice. As a young man he had vision and ideals that led him to train for a career in the fields of religion and education. He became interested in the tuberculosis prevention movement in the early years of its development, when the missionary spirit and zeal of a Trudeau were required in anyone who might take such a step.

"Coming to realize the enormous suffering tuberculosis was causing countless numbers of his fellow men and getting an appreciation of its magnitude as a social and economic burden, Doctor Brown took up the fight against the disease as his life work. Knowing from his training and experience the intimate relationship between physical, mental, and spiritual wellbeing, he found in the small but rapidly growing tuberculosis prevention movement a challenge and opportunity for applying his talent and idealism. Material advancement and personal economic security were of little concern to him but, with those who enter medicine in the best tradition and practice of the profession, he did want above all else in life the satisfaction of serving mankind. And that satisfaction came to him in large measure.

"In the long period during which he worked in the tuberculosis movement, Doctor Brown saw truly marvelous progress made. He not only made a notable contribution to the success of the movement in a general way, he was at all times keenly sensible of the individual and family aspects of the disease. He knew how tuberculosis could wreck promising lives and homes. His deep sympathy for those who suffered through no fault of their own and his steady anxiety to improve the lot of his fellow men were constantly manifested in efforts to help those who came or were brought to his attention.

"Doctor Brown was a particularly fine example of the numerous lay workers who have helped the medical profession and public health officials both extensively and effectively during the past third of a century in this Country to prevent and bring tuberculosis under control. His career in this great cause was of invaluable service." F. W. B.

TUBERCULOSIS AND MEDICAL EDUCATION

HAVE we reached a stalemate in our fight against tuberculosis?

Recent reports show that the decline in the death rate from tuberculosis has stopped, and in some states has slightly increased. Education of the public goes on, and should go on, but how about the education of the medical profession? Are our medical schools devoting enough time to the study and diagnosis of early tuberculosis?

From the report of Dr. E. W. Hayes and his committee, it will be seen that many of the men in charge of medical schools feel that the situation regarding the teaching of pulmonary tuberculosis more intensively, needs serious attention. There are, however, a few of our medical schools giving this subject special attention, while the deans of some of our largest and best known medical schools, do not approve of dividing the general subject of internal medicine into special subjects.

It seems to us, that when a preventable and a curable disease still heads the death rate in certain age groups and when we note that the decline in the death rate seems to have stopped, that it is time our medical schools should seriously consider the situation.

Our committee on medical schools feels that the place to interest and educate the general man in tuberculosis is in our medical schools. They do not feel that our medical schools should take the attitude that a working understanding of this subject should be left for post graduate study.

They also recommend that a committee composed of tuberculosis workers and representatives from medical schools be formed and work out a plan for the more efficient teaching of the subject of tuberculosis. C. M. H.

A MASS ATTACK ON TUBERCULOSIS IN GEORGIA

GEORGIA is on the march with a plan for the control of tuberculosis in the state, and from which the health authorities are eventually hoping for the eradication of this plague within her borders. This hope or dream seems somewhat rose-colored; but this coordinated effort is to be commended, and surely it is a step in the right direction. Truly for the first time in the history of the state is such a comprehensive and coordinated program being launched. No longer are only a few victims of this dread disease to be reached but under this plan every person who has tuberculosis and who is willing to co-operate may have adequate medical care, supervision and economic relief. The operation of this plan is assured by the coordination and agreement of the Public Assistance Division of the State Welfare Department, the Georgia Tuberculosis Association, and the State Board of Health. The machine is being set up, oiled, and operation is expected to begin within a few days. As this goes to press, it may be well under way.

According to the provisions of the plan each applicant to the State Sanatorium at Alto (there are now over 1100 on the waiting list) will be investigated by a physician either from the Georgia Tuberculosis Sanatorium or from the Division of Tuberculosis Control of the State Health Department. The needs, both medical and economic, of the applicant will be carefully studied and the applicant put at once under the proper supervision and care. It will thus be possible for every case requiring it, to have that most important requisite in the treatment of tuberculosis—*rest in bed 24 hours every day.* Those cases suitable for admission to the Sanatorium will be admitted in the order of the date of their application. In many cases lung collapse measures are advisable and to have them instituted, hospitalization is usually necessary. The State Sanatorium beds are to be utilized as far as possible for this purpose. The stay in the Sanatorium should be for no longer than is necessary to accomplish the desired results. As soon as bed care only is required, or pneumothorax refills can be arranged for in the town or community in which the patient lives, he should be discharged from the Sanatorium and returned to his home. This arrangement will very markedly expedite the Sanatorium turn-over, permitting a much larger number to receive the benefits of the required stay there.

Tuberculosis is a tremendous problem in Georgia. It is estimated that there are over a million infected persons, more than 8,000 active cases and annually a death toll of more than 1,700. It prevails in every section of the state. It is obviously impossible for the 8,000 active cases to be treated at Alto; but the following plan will make efforts to develop the resources of the State and community to furnish all of them treatment, supervision and relief.

1. Medical and nursing supervision are available universally through the family physician, county health units (there are 39 and soon will be 50), 13 public health nurses in 13 additional counties, 9 State district tuberculosis nurses, 18 State district advisory or consultant nurses, and a number of well organized city and county tuberculosis associations.

2. Special treatment (lung collapse) may be obtained in 4 county sanatoria, several tuberculosis association clinics, and through many physicians who have qualified themselves to perform it, and in the State Tuberculosis Sanatorium.

3. A consultation service maintained by the State Board of Health through its Division of Tuberculosis Control.

4. Assistance in planning relief, furnishing of medical care and payment for special treatment (lung collapse where required) by the State and County Welfare Department in every county, and by the Georgia Tuberculosis Association through its many local organizations.

Very likely, with the further development, cooperation and employment of all these agencies; the dream of control and eventual eradication of Tuberculosis within the State of Georgia may be on the way to some measure of realization. The computation to the state looms large in a financial consideration; but the value is immeasurable in its reduction of human suffering and its increase in the full, wholesome contentment of living. C.H.H.

The Onset of Tuberculosis Following Tonsillectomy

BY
E. W. PHILLIPS, M.D., F.A.C.P.*
Phoenix, Arizona

It appears that many people regard tonsillectomy as a necessary evil, like the measles, to be had sooner or later and then forgotten. When in the routine of history-taking, sanatorium patients are questioned as to what operations they have undergone, they do not fail to enumerate major procedures such as appendectomy; even the surgical relief of hemorrhoids or of ischio-rectal abscess is seldom overlooked. But many of them make no mention of tonsil operations unless they are specifically interrogated on that point. Then a considerable number will say: "Oh, my tonsils? Yes, they were removed. . . ." and the date is recalled, perhaps with difficulty.

Three groups of consecutive patients of a small sanatorium*, numbering 829, and all with proved tuberculosis of the lungs, were carefully questioned on this point. Their replies revealed an interesting situation. One hundred and eighty, or 21.7 per cent of the group, had undergone tonsillectomy. This percentage, while rather high, might not be excessive for young adults subject to respiratory infections, but 65 of these 180 patients had been operated in the third decade of life: more then, in fact, than were operated on in childhood or adolescence. An equal number, not always the same persons, had had their tonsil surgery a short time before the known onset of tuberculosis. It seemed proper to inquire into the conditions responsible for these unusual figures.

It was not possible in all cases to learn the reason for tonsillectomy done in childhood; sore throats and attacks of tonsillitis were cited as a rule, rheumatic fever and endocarditis once each. But the patients who were operated in later life, especially those whose surgery occurred shortly before the sickness that brought them to the sanatorium, knew the complaints with which they had gone to their doctors and whether they had been relieved. The symptoms of some were definitely related to the tonsils: acute tonsillitis for the most part, usually in repeated attacks, and in a few instances associated with chorea, endocarditis, or rheumatic fever. The symptoms of others had been equivocal; as referred to the throat, dryness, periodic hoarseness, repeated colds, cough, and sometimes expectoration. Or they had complained of constitutional symptoms such as fatigability, loss of weight, disturbed digestion, irritable nerves, and frequently of soreness and aching in the neck, shoulders, and legs.

When the cases were considered as a group, it was apparent that the results of tonsillectomy, from the viewpoint of the patients, bore a definite relation to the age at which operation had been done, and to the symptoms from which relief had been sought.

Forty-nine patients were operated during childhood. All but one (who still has his tonsils) were relieved, so far as they knew. One child was known at the time of operation to have tuberculosis of the childhood type; no harm resulted. For this group the earliest known onset of clinical tuberculosis was seven years after tonsillectomy, and the average interval was twelve and a half years.

During adolescence, 51 of these patients had been deprived of their tonsils. Of these, 31 came to operation because of symptoms definitely localized in the throat, acute infection as a rule, and all but one had no further trouble. The interval between tonsillectomy and the known onset of tuberculosis in this group was on the average a trifle less than eight years. In contrast to these are 20 adolescents who underwent tonsillectomy because of symptoms which were not definite, but suggestive of focal infection or chronic tonsillitis. Only one obtained more than temporary relief; the remaining 19 went on to develop tuberculosis

*St. Luke's Home, Phoenix, Arizona.

within a fairly brief period, the interval to diagnosis varying from a few weeks to three years.

Of the 65 young adults (age 20-29) there were 31 who had frank tonsillar infection, mostly acute. All but two of these were satisfied with the operative result, and the interval between tonsillectomy and the diagnosis of pulmonary tuberculosis varied from 3 to 21 years. But the remaining 34 of this age group, operated upon in the hope of relieving constitutional symptoms as of focal infection, were less fortunate. Only one of the lot had worth-while relief; the rest, within two years and in most cases within a much briefer time, fell ill with tuberculosis.

Still less satisfactory to their recipients were the tonsillectomies performed in middle life. Of 15 such, two were done for recurrent tonsillitis, with relief. The remaining 13 patients, in their quest for better health, soon learned that their focal infection was really tuberculosis.

Caution is needed in trying to interpret data of the sort here presented. The evidence is in part indirect, the number of cases small. Still, making due allowance for probable errors, we find in this material two things that demand explanation. First, the excessive proportion of tonsillectomies done not in childhood, as is usually the case,[1, 2] but in the third decade of life when the incidence of tuberculosis is greatest; second, the finding that a considerable number had undergone tonsillectomy with little or no relief of symptoms, shortly before the onset of clinical tuberculosis. This time relation between operative interference and the onset justifies the question,[3] earlier presented to a regional medical group, as to whether the tonsillectomy may have lighted up a latent tuberculous infection and precipitated the onset of clinical disease.

It is clear that removal of the tonsils in childhood did not protect against tuberculosis; neither did it predispose to that disease, as the long interval between operation and onset—twelve and one-half years in the childhood group—tends to show.

There is no evidence that tonsillectomy for the relief of acute tonsillar infection provoked the onset of tuberculosis, whatever the patient's age. On the contrary, one child known to be tuberculous had a long interval before lung disease appeared; one adolescent whose tonsils were found by microscopic examination of stained sections to be tuberculous, was well for 8 years after their removal. Three young adults, under treatment for tuberculosis at the time, had infected tonsils removed without disturbing their favorable clinical course.

Most of those who had little or no relief after tonsillectomy, with tuberculosis following not long thereafter, had complained of indefinite local or constitutional symptoms of the sort attributed to focal infection—symptoms that are practically identical with the toxic manifestations of early tuberculosis. In the light of what happened to them later, it is within reason to surmise that these patients had undetected tuberculosis at the time their tonsils were removed. Probably the operation in itself did no harm. It may even have been of temporary benefit by compelling the tired, tense patients to rest while their throats healed. The damage, if such there was, came from the fact that something tangible and active had been done; doctor and patient were thrown off their guard, the diagnosis was missed completely, and the patient went on to a disastrous breakdown.

A potent factor contributing to such failure of diagnosis is found in the attitude of certain patients themselves. In this age of specialization, a person who is ill may in effect make his own diagnosis by the selection of his doctor. One who consults a throat specialist and localizes his complaints to his throat, is likely to get what he asks for. As Schuster[4] has pointed out, the type of youth especially liable to tuberculosis is usually reluctant to believe that his lungs are diseased. He would much rather think that his trouble is only in his throat and that it can be cured by the easy process of tonsil removal. The surgeons, whether general or

special, who remove tonsils do not as a rule make a complete anamnestic and physical examination, nor do many of them follow up the patients subjected to this simple operation. For frankly localized disease, so much additional work is not necessary.

But when an adolescent or an adult appears with indefinite symptoms as of focal infection, it would seem to be the duty of the surgeon, even though the tonsils may show some evidence of chronic infection, to inform himself thoroughly concerning the condition of that patient's lungs. A casual examination of the chest is not sufficient; if there is the least doubt, the chest should be x-rayed and the films should be interpreted by one skilled and experienced in that special work. Nothing less than this will do; errors and delays are too costly in time and health and life itself.

Here is an opportunity for early diagnosis, creditable to the doctor and most advantageous to the patient, that should not be missed. Laryngologists justly take pride in their early discovery of occasional cases of tuberculosis by inspection of the larynx. Here is another and a larger group, first seen by throat specialists and general surgeons who do tonsillectomy, that brings to these surgeons a heavy responsibility and with it a commensurate privilege of doing service of great value to their patients and to the community. The early recognition of tuberculosis may save its victims from years of invalidism followed by permanent damage.

This paper is not an indictment of the operation of tonsillectomy nor of those who perform it. Rather, it is a plea for a greater degree of awareness of the onset symptoms of pulmonary tuberculosis, a common disease; and for the withholding of non-urgent tonsil surgery when tuberculosis is present or suspected.

Bibliography

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2. Thoeny, O. W.: Personal communication. In a cross section of his current practice he finds that of 210 patients whose tonsils have been removed, 38 per cent were operated in the first decade, 31 per cent in the second, and only 18 per cent in the 20-29 year age group. Definite localized infection was the indication for tonsillectomy in nearly all cases.

3. Phillips, E. W.: Does Tonsillectomy Light Up Latent Tuberculosis? Southwest Med., March, 1934.

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Non-Tuberculous Pulmonary Lesions in Children

BY
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Philadelphia, Pa.

In presenting a few considerations of non-tuberculous pulmonary lesions in children, bronchiectasis, as a causative factor, was omitted. We are well aware that it is being found more frequently than in former years and is one of the more common pulmonary ailments in children; we know that it is frequently a basal lesion. Foreign bodies have also been omitted. The three conditions presented are upper lobe lesions, which were diagnosed as pulmonary tuberculosis by x-ray study and tuberculin reaction.

The diagnosis of childhood or primary tuberculosis in children is made by the x-ray and tuberculin test, and accuracy has been established in the studies by Opie, Hetherington, Rider and Exner, Hart, Myers, Stewart, Krause, and others. Krause has shown that the smallest number of tubercle bacilli, if they survive in the body, will infallibly lead to tissue allergy and will persist as long as bacilli remain.

In epituberculosis, there is a more or less extensive exudative or atelectatic involvement of the lung, with which the child may or may not show marked illness, though, in the majority of cases, there are few or no symptoms. The involvement is usually of the upper lobe. The temperature is usually normal or about normal. In our case, L. F., age 11, all signs were absent and the involve-

ment was in the right upper lobe. The x-ray study showed partly calcified nodes in the right hilum region. There was an area of moderately dense consolidation lying in the mid clavicular line at the level of the third rib anteriorly. In four months time, the area involved had completely resolved and the tracheo-bronchial lymph nodes showed considerable calcareous deposit. Myers and Stewart, at the Lymanhurst School for Tuberculous Children, found in their observations that the primary infection, due to tubercle bacilli, in children with extensive parenchymal lesions, resolves and disappears or leaves inconspicuous calcified areas though it may take months to do so; whereas, in the secondary infection, adult type, due to re-infection, the mortality rate is high and the lesion tends to spread and cavitate. The prognosis is grave in the adult type of tuberculosis. This type of tuberculosis frequently results in death, while the primary infection is rarely fatal. Myers states that where cavitation is due to tuberculosis, 90 per cent are positive for tubercle bacilli, but that negative sputa should not be accepted until gastric contents have been examined for the tubercle bacilli.

Allan K. Krause has aptly brought to our attention the fact that chronic pulmonary infections in childhood are often mistaken for tuberculosis. It is our desire to present three cases of children who came to the clinic diagnosed as pulmonary tuberculosis but, on further study, were found to be non-tuberculous, though the diagnosis was made as a result of the x-ray findings and positive tuberculin reaction.

Atelectasis may be confounded with pulmonary tuberculosis. The principal intra-bronchial causes for atelectasis are foreign body, primary new growths, bronchial inflammations with ulceration and exuberant granulations, inspissated secretions, bronchitis, broncho-pneumonia, and whooping cough. A young white girl, age 10, had partial bronchial obstruction following broncho-pneumonia. The Mantoux test was positive. X-ray showed atelectatic pneumonic consolidation of the right upper lobe. The sputum was negative for tubercle bacilli. Bronchoscopic study revealed partial stenosis of the right upper bronchus; cultures and smears made from the secretions obtained were negative for tubercle bacilli, although positive for the streptococcus albus and the streptococcus hemolyticus.

Congenital cysts of the lungs are often confused with pulmonary tuberculosis, where the tuberculin intracutaneous skin test is positive, and the x-ray studies show cavities. The unilateral lesion, repeated negative sputum, and negative cultures for tubercle bacilli justify bronchoscopic study and the instillation of lipiodol for diagnosis. Our case was observed for six years; there was no change in the affected side and no spread to the remaining tissue of the lung involved or to the opposite lung.

Fibrosis of the lung may be diagnosed as pulmonary tuberculosis, for it can come from almost any disease, whether acute or chronic. Bronchiectasis may follow fibrosis and it is a question whether these cavities are bronchiectatic in origin. Even though one has a positive tuberculin skin reaction and the x-ray study gives the picture of pulmonary tuberculosis, sputum examinations and culture for tubercle bacilli should be done. If these are negative, bronchoscopic studies are justifiable for smear and culture. In children, the adult type of tuberculosis tends to spread and cavitate and the prognosis is grave.

In our case the involvement of the lung remained confined to the left lobe for the seven years he was under observation. The sputum examinations remained negative for the tubercle bacilli. Cultures were also negative for tubercle bacilli. We felt that the condition might have been caused from a retropharyngeal abscess that he had, or from a tonsillectomy. The bronchoscopic report was that the lesion may have been tuberculous, although it was not possible to find anything to substantiate this belief.

Non-tuberculous lesions can be in the upper lobe and unilateral. A child may have a positive tuberculin test and x-ray findings suggesting tuberculosis, yet have

no positive tuberculous lesions. Bronchoscopic studies are of great value in doubtful cases in which the sputum is repeatedly negative, for in this way secretions may be obtained directly from the foci, free from contamination, and this method also provides direct visualization of the bronchi.

The Ambulatory Cough of Short Duration

(A Lecture to Students in Northwestern University)

BY
JEROME R. HEAD, M.D.
Chicago, Illinois

Whoever of you enter the general practice of medicine will find that a high percentage of your patients will come to you complaining of cough. Most of these will have nothing seriously wrong with them and most will recover whether or not you make a correct diagnosis or prescribe proper treatment. But scattered among them will be some who have serious disease or disease that is potentially serious, and therefore it is important that you consider the whole group very carefully so that you will not make mistakes either of omission or commission, will not miss those who have serious disease or overfrighten or over-treat those who require little treatment.

Probably the most common of all diseases is the common cold. This, like influenza, is a diagnosis that covers a multitude of infections and by no means stands for a single etiological or pathological entity.

For our uses here we can consider that it includes all of the common non-specific infections of the upper respiratory tract and pharynx. I would warn you that in the lay mind a "cold" or the "flu" means anything from a running nose or a sore throat to a pain in the back, a high fever, or a primary cough or pleurisy. It is important to remember this and to make your patients be specific concerning their symptoms for the presence of a preceding upper respiratory infection is of great significance in the diagnosis of lower respiratory disease.

I have mentioned the common cold because it is the most frequent cause of cough. As all of you know by personal experience, a primary rhinitis, pharyngitis or tonsillitis is usually followed in a few days by a laryngitis, a tracheitis and then a bronchitis. There is a definite gravity progression of the infection from the upper to the lower respiratory passages.

Coughs that follow colds in the head are usually not serious. Most are caused by an acute or subacute tracheitis and bronchitis and although fever may be high for a day or two, it is usually low or absent and steady attendance at work is not often interferred with. Pleurisy pains may occur, but are rare. Physical examination is usually negative. There may be a few rales at the base posteriorly—nothing more. The x-ray is essentially normal, although thickening of the markings extending from the lung roots into the bases may be found. The location of the infection in the lower and posterior portions of the lungs is further evidence of the importance of gravity in its progression.

The disease is self-limited and its course fairly constant. The febrile period, if present at all, is usually brief, and the cough, at first tight, painful and dry, gradually loosens and becomes more productive. All symptoms usually disappear in from two to six weeks.

To say that coughs secondary to colds in the head are not serious is not wholly true. There are exceptions. Acute broncho or lobar pneumonia may ensue, and one must remember that measles always starts as a coryza and that the first symptoms of typhoid fever, poliomyolitis and epi-

demic encephalitis are those of upper respiratory infections. Then too, a person with early tuberculosis may occasionally be led to consult a doctor because the symptoms have become aggravated by a common cold.

Nevertheless, we can adopt it as a fairly workable rule that afebrile cough of not more than two months duration which has followed a cold in the head is evidence of a self-limiting subacute bronchitis and is not serious.

Conversely one may adopt it as a fairly workable rule that afebrile or subfebrile cough and pleural pain which are not preceded by an upper respiratory infection are quite likely to be serious.

There are exceptions to this. Pertussis is a primary bronchitis and in certain rare epidemics simple bronchitis appears to be primary.

All this is important because most patients who consult you because of these ambulatory coughs do so because they fear that they have tuberculosis. To answer this question correctly is your great responsibility, and in doing it you will be fulfilling one of your chief functions as a physician — that of determining whether the patient who consults you has a self limited and benign disease or one that is potentially serious.

Now in this group of afebrile ambulatory coughs of short duration, tuberculosis is certainly the most common disease that is serious and threatening; and it is therefore of first importance that you know how you may recognize it, if it is present, and how you may be quite certain of the fact, if it is absent.

The problem can be solved quite simply by taking an x-ray; and there is no other way of solving it. I do not mean that the x-ray is the whole answer to the question of early diagnosis of tuberculosis, but I do mean that in all save a very rare instance the x-ray will reveal a tuberculous lesion long before it produces the slightest physical sign, long before it produces symptoms, and long before the sputum is positive.

What this means is quite obvious. It is that physical examinations, sputum examinations, temperature records, weight charts, sedimentation tests, blood counts, and everything else are of no value in ruling out the presence of pulmonary tuberculosis, and that in the vast majority of cases the diagnosis of early tuberculosis must be made and can be made by the x-ray.

Does this mean that everyone coming to you with complaints referable to the respiratory system should have an x-ray of the chest? There is only one possible reason for not proceding on this principle and that is the expense that it would be to your patients. When one considers that several patients out of every hundred will be found to have early pulmonary tuberculosis and will thus be saved from death or long illness from this disease, the expense does not seem considerable. No one any longer dares to treat an injury to a bone or joint without a diagnostic x-ray. He should feel the same about diseases of the chest; for whereas a small missed fracture may give slight permanent deformity or disability, a missed early tu- that is potentially serious.

But let us grant for a moment that it is not feasible economically to take x-rays of every one and consider whether there is not some way of distinguishing between those who are little likely and those who are quite likely to have tuberculosis or some other serious lung disease. I have already said that the most common cause of ambulatory cough of short duration is subacute bronchitis secondary to upper respiratory infections. One is fairly safe in not x-raying this large group if he first assures himself that there is no history of contact with tuberculosis, that no suspicious symptoms antedated the cold in the head, that a cold in the head actually existed and that hemoptysis, pleural pain or persistent fever have not accompanied the cough.

But no patient with respiratory symptoms, not even those of this group, should be sent away on the assumption that his disease will be self limited. All of them should be given definite instructions concerning symptoms which should demand immediate return, and all should be fol-

lowed to see that the bronchitis runs its expected course. One should tell them, as he might one with a turned ankle, "In all probability your cold has left you with a mild bronchitis which will go away in a short time. To be quite sure that nothing more serious is present I would have to have an x-ray. It is a good thing for anyone to have an x-ray of his chest occasionally and we can either have one now, or, if you wish, dispense with it and take it later only if the cough persists or some unexpected symptoms develop. Let me know if you develop fever, if you expectorate blood, or if you have any pain; and in any case come in and see me two weeks from now."

Even this procedure is very doubtfully permissible and only for a special group of cases. You must remember that the x-ray is the *sine qua non* in diagnosis of diseases of the chest, and if the history of a cold has not been definite, if the cough has lasted longer than four weeks, if fever or hemoptysis have occurred, then an x-ray must be insisted upon. A negative physical examination is not sufficient.

In children these subacute bronchitides have certain pecularities that warrant separate considerations. Not only are they apt to be different in their course and duration, but there is a group of diseases which must be considered in the differential diagnosis.

I have already said that in small children the nose blowing act is inefficient and the cough reflex poorly developed. A constantly dirty nose predisposes to infection of the lower respiratory tract. The inability to cough the bronchi clear of secretions favors the development of severe bronchitis and bronchopneumonia, and also favors the persistence of the cough and sputum of the chronic stages.

One may expect, therefore, that the initial fever will be higher and more common, that pneumonia will be a more frequent complication, and that the cough will not clear as rapidly as it does in adults. One will also be much more likely to discover physical signs—usually rales at the bases of the lungs.

The diagnosis is more involved than in adults because in childhood pertussis and measles must always be expected and foreign bodies must be kept constantly in mind.

Summary and Conclusions

If the present discussion has been very elementary, it is none the less important. If you remember nothing of it save that early tuberculosis produces no physical signs and can be recognized only by the x-ray, you will have learned enough for one day. And if you happen to keep it in your mind that what the patient calls a cold may not be a cold, that also will be to your advantage.

The Differential Diagnosis of Pulmonary Tuberculosis

BY
ELLIOTT MENDENHALL, M.D.
Dallas, Texas

It has been said that if one knows syphilis and tuberculosis, he knows medicine. That is largely true, for a study of these two diseases with their protean manifestations leads one through nearly all the by-paths of medicine. While we do not possess a specific for the cure of tuberculosis, yet it yields more readily to properly applied treatment than any other chronic disease. Hence it is of utmost importance to diagnose it in an early curable stage.

The fact that an individual is above normal weight or that he appears to be in good health is not sufficient proof that he is free from tuberculosis. On the contrary, every one who is emaciated and has respiratory symptoms is not suffering from tuberculosis. The general appearance of a person, then, is not a diagnostic criterion, although far-advanced active tuberculosis is often housed in a wasted

body. The diagnosis of tuberculosis in a curable stage is often a difficult task but it need not be an uninteresting piece of drudgery. More fascinating than a detective mystery is the story of a patient's symptoms. Picking out pertinent points and following up these clues is indeed a bit of scientific detection. For years writers on tuberculosis urged early diagnosis and we still stress its importance. Recently, however, reports are appearing from institutions specializing in the treatment of tuberculosis of the many patients who are sent to them with some trouble other than tuberculosis. This means that physicians have become "tuberculosis conscious," but we must go a little further and accurately confirm our suspicion of the presence of the disease. It should be remembered in connection with early diagnosis that tuberculosis is not always insidious in onset. It may appear in an acute form that requires immediate and vigorous treatment if the patient is to be saved and the spread of the disease prevented.

Factors in Diagnosis

One of the factors of foremost importance in the positive diagnosis of tuberculosis is the patient's medical history. Too much attention to detail cannot be given this factor. A careful family history should be taken, especially with relation to intimate exposure of the patient to infection. Realatives, friends, and servants who are reported to have asthma, chronic bronchitis, or "winter cough" should be looked on with suspicion with reference to tuberculous infection. Attacks of pleurisy in the absence of an acute respiratory infection are very suggestive of tuberculous infection and should be so considered until proved otherwise. Fistula-in-ano is often tuberculous and whenever found it suggests a careful chest examination. It is quite well-known that bleeding from the lower respiratory tract is to be considered tuberculous in origin until proved to be something else. The more usual symptoms of tuberculosis such as undue fatigue, cough, fever, slow convalescence from other illnesses, loss of weight, etc., require a careful search for their cause.

Positive physical signs are not always present in the earlier stages of tuberculosis. Their absence does not rule out the presence of active disease. However, over 95 per cent of lesions in the upper one-fourth of the lungs are tuberculous in nature. If rales are persistent in that area, it is most likely tuberculosis. The x-ray should be used in cases where physical signs are negative or questionable. Many times a good film properly interpreted will disclose unsuspected lesions or confirm doubtful ones. Intra-cutaneous tuberculin skin tests, especially in children and younger people, will reveal the presence of a tuberculous infection, but a positive skin test does not neccesarily mean active tuberculosis. Repeated sputum tests are often helpful in determining the nature of the pulmonary disease present. One negative sputum does not by any means rule out tuberculosis. Tests should be repeated many times and each specimen *carefully* examined. In some instances it is neccesary to keep the patient under close observation for a period of weeks to determine whether he has tuberculosis. A wise physician will not hesitate to do this when it is necessary. Do not let the patient or his family rush you into making a positive diagnosis.

It is not possible in a brief article of this nature to consider all the diseases that might be confused with tuberculosis but we will consider the salient points of a few of the commoner ones.

Sinus Disease

It may help to systematize our diagnostic procedure if we consider the diseases in anatomical order. Disease of the accessory nasal sinuses is very prevalent. Oftentimes this causes a secondary bronchitis which is sometimes diagnosed as tuberculosis. The sinus disease may also produce constitutional symptoms not unlike those encountered in active tuberculosis. Careful examination, including x-ray of the sinuses, by a competent nose and throat specialist, will reveal the true condition of the upper respiratory tract. Even in the presence of sinus disease the

patient may also be found with a concomitant pulmonary tuberculosis. Repeated sputum examinations and x-ray of the chest are important aids in finding these cases. If tuberculosis is not present, proper treatment of the sinus infection will clear up the symptoms. But a study as just outlined will enable one to make the differentiation without a possibly dangerous delay.

Chronic Bronchitis and Bronchiectasis

We shall consider chronic bronchitis here that is not secondary to heart or kidney disease. The patient who has chronic bronchitis is one who is subject to frequent colds. He gives a history of having coughed and expectorated for years, although his general health has suffered very little. Tuberculous patients on the other hand usually give a history of a definite onset no matter how insidious it may be. In chronic bronchitis the harsh breath sounds are heard over most or all of the chest while in tuberculosis the change in breath sounds is limited to the tuberculous lesion which is usually in the apex of one or both lungs. Although the physical signs may denote extensive involvement in a case of bronchitis the patient's general health is not affected in proportion. Patients with basal tuberculous lesions are far sicker clinically than those with fairly extensive bronchitis.

Bronchiectasis is not so easily differentiated. Many patients with bronchiectasis have been treated for years for a tuberculosis which they did not have. Bronchiectasis is usually secondary to some other respiratory infection, acute or chronic. It often accompanies tuberculosis. The cough and expectoration in cases of bronchiectasis come in attacks with frequent remissions. The symptoms are usually more marked in the fall and winter and improve in the warmer dryer weather. Change of position often initiates a coughing spell. The sputum often is abundant and comes up in mouthfuls; when allowed to stand it separates into three layers: an upper frothy layer, the next turbid and muco-serous, and the bottom layer composed of heavy sediment of pus and debris. Hemoptysis is not an infrequent symptom. The patient's general condition is usually good, although he often has a sallow color or may even appear cyanotic. The patient's history helps to differentiate this condition from tuberculosis. The x-ray of a bronchiectatic chest may show only a bronchial thickening especially extending to the bases. After an injection of lipiodol into the bronchial tree, the outline of the dilated bronchi can be seen and the true nature of the disease revealed.

Pulmonary Abscess

A carefully taken history of the patient often clears up the diagnosis in cases of lung abscess. Most pulmonary abscesses follow infections of or operations on the upper respiratory tract and mouth. The cough, abundant sputum, and septic symptoms are characteristic of the acute abscess. This typical history can often be obtained in the chronic form too. A blockage of the drainage causes a rise in temperature and free drainage allows the temperature and other toxic symptoms to subside. Repeated examinations of the sputum fail to reveal any tubercle bacilli but it often contains fusiform bacilli and spirochetes. The x-ray film will show the abscess cavity which often has a fluid level. This finding is not so frequent in tuberculosis.

Malignancy

There has been a decided increase in the incidence of cancer of the lung in recent years. This disease is assuming great and grave importance in chest diagnosis. The age incidence is of great help in differentiating cancer from tuberculosis. Tuberculosis may be observed at any age but is most frequently found before thirty-five. Cancer is rarely found before thirty-five. The onset is insidious with cough, at first unproductive, then sputum, mild fever and hemoptysis. Pain is a very important symptom of cancer, as well as dyspnea. Loss of weight may occur in early tuberculosis but it is a late manifestation of pulmonary cancer. There

is often a circumscribed area of atelectasis in cancer cases that gives a flat percussion note, while we rarely get a flat note over an early tuberculous lesion. There may be present a pleural effusion that comes on without any toxic symptoms. These effusions are usually sero-sanguineous and fill the entire pleural cavity. The fluid may be aspirated and a diagnostic pneumothorax instituted. The x-ray will then show the tumor more clearly and its true nature may be determined more accurately.

Pneumonoconiosis

This is a condition occurring in individuals who have been exposed to very fine particles of dust, from sand, rock or coal. A history of rather prolonged exposure to such dusts, cough at first dry and then productive, night sweats, and weakness are the presenting symptoms of pneumonoconiosis. Dyspnea is marked even on the slightest exertion. A careful interpretation of the x-ray films is a material aid in differentiating this condition from other pulmonary effections.

Mycotic Infestations

The more important members of this group are as follows: actinomycosis, blastomycosis, and aspergillosis. They are not so frequently seen but it is well to keep them in mind when dealing with an obscure pulmonary disease. The history of the patient's contact with cattle or the plants that carry the fungi is important in the diagnosis. A careful study of the sputum, complement fixation tests, and x-ray studies are great aids in finding the true nature of the pathology present.

Syphilis of the Lung

This is a rare condition and is rarely correctly diagnosed. Bronchial mucous patches or gummata may occur. Repeated negative sputum examinations and a positive Wasserman in the presence of chronic lower respiratory tract infection suggest pulmonary syphilis. The therapeutic test should be used to determine the nature of the condition.

Thyroid Disturbances

It is sometimes very difficult to differentiate the early stages of tuberculosis and hyperthyroidism. The advanced stage of either disease is usually easily recognized and mistakes may be minimized in the earlier stages. Patients with a rapid pulse, a tendency to sweat on the least exertion, and languor, are likely to be suffering from an overactive thyroid. They should not be considered tuberculous unless chest examination and x-ray proves the presence of a pulmonary lesion. The basal metabolic rate in hyperthyroidism is usually higher than in tuberculosis, although it is often elevated some in tuberculosis. Hyperthyroidism is accompanied by a normal or an elevated blood pressure while tuberculous patients usually have a low blood pressure. It is better to treat a doubtful case as tuberculosis for some treatments for hyperthyroidism are harmful to a tuberculous patient.

Occasionally the fatigue, lack of endurance, etc., that accompanies hypothyroidism may be mistaken for the fatigue and inertia of tuberculosis. A careful history and examination with x-ray and basal metabolism will make the differentiation.

Undulant Fever

Another constitutional disease that may be confused with tuberculosis is undulant fever. In this disease there is a leukopenia, an enlarged spleen, and a positive agglutination or skin test. It must be remembered as one of the causes of long-continued fever.

Summary

We have attempted to call attention to the more common pulmonary and constitutional diseases that are confused with tuberculosis. It is extremely important to remember that a careful history and a careful *complete* examination will in most instances make the diagnosis. Do not hesitate, however, in appropriate cases to keep the patient under observation until an accurate diagnosis can be made.

Tuberculosis

A Brief Outline of Treatment and a plea for Pneumothorax in **Minimal Cases.**

BY
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ROBERT LOUIS STEVENSON once said, "It is not a hard thing to know what to write; the hard thing is to know what to leave out." He might well have added that this applied to the subject of tuberculosis, for indeed to attempt to cover any considerable part of that subject at the present time would place the writer in a position to be accused of plagiarism.

As far back as the history of medicine goes, this disease has been known and written about. No other disease, acute or chronic, has taken so heavy a toll from the human race as has tuberculosis. The ancients gave it the name of Phthisis or Consumption, evidently because of its destructive character in any tissues which it invaded. The Bible has two references, viz. Leviticus 26-16 and Deuteronomy 28-22, in which this disease is linked up with others and indicates that its deadly and destructive character was known at that time. It is the most widely distributed of all afflictions to which mankind is subject. It is no respecter of persons; it attacks the old and the young. The youth at the threshold of a life of usefulness and accomplishment, the aged and infirm — all alike are swept from their different activities, no matter how useful they may be. It is confined to no race, creed or clime, for indeed wherever civilization has blazed a trail or the foot of man has trod, this dread disease has stalked in his wake and claimed its victims. It does not stop with human beings, but even the reptiles that crawl the earth, the fish that swim the seas, the birds that soar to the clouds, the beasts of the field and the cattle of the hills, in short, nearly everything that lives and moves is subject to the ravages of this dreaded and deadly malady. The economic loss it has caused cannot be calculated, or even estimated with any degree of certainty, for indeed it staggers the imagination. Confronted by this implacable foe to man's existence, our progenitors joined the fray for the survival of the fittest, and so the battle has ever raged with neither side being able to claim victory.

For many decades the medical profession has maintained that to find the cause of a disease was the forerunner of a preventive or cure. This axiom was so strong and well grounded that when the immortal Koch in 1882 announced that he had demonstrated the bacillus tuberculosis as being the cause of the disease, the world was fired with hope as never before. When this announcement was followed later by his discovery of tuberculin, it seemed indeed that the victory was in sight and that the great white plague would soon be a thing of the past. Why did this not follow according to expectation? Why was the great Koch permitted to die a disappointed and broken-hearted old man because of the failure of his life's work in not finding a specific in tuberculin? The answers to these questions we do not know as yet. But in spite of the failures and disappointments which the workers in this field have met, they have not given up the fight. They are still burning the midnight oil, their confidence unshaken, their faith still strong that what has been accomplished in so many other diseases is still possible with tuberculosis. The fact that the death rate from tuberculosis has been reduced within the last quarter century from approximately 240 per 100,00 to less than 70 is enough to inspire them to further efforts.

Until that happy day when some one stumbles onto a specific, what can we do for these sufferers? No set of people on earth have been so grossly and extensively imposed upon by quacks as have the tuberculosis sufferers. They are daily confronted with advertisements of sure cures in newspapers, magazines (and not all of the tabloid type, either), and all forms of outdoor advertising including that put out by street fakers, spine twisters and what nots, whose greatest stock in

trade is making war on the medical profession because we do not back up their game by endorsing their colored water and bread pills. Many of these schemes are so adroitly advertised and so well backed up by apparently genuine testimonials as to entrap the unwary and create a feeling of false security on the part of the patient, while the disease is running riot for the want of proper treatment. This, of course, means loss of time, and any time lost in treating pulmonary tuberculosis is always *valuable* time.

First off, all tuberculous patients should have a period of institutional care where all treatments are properly supervised and the patients educated in recognizing symptoms and adapting themselves to the rigid routine which is so highly essential in carrying out any treatment. This should include those who from contact are even suspected of being infected. Fortunately, there is no excuse for this not being done in this day and time. Those who are financially able can go to private sanatoria, and those who are not so fortunately situated can be cared for by the many public-supported institutions throughout the country. All these institutions should be, properly speaking, *schools of instruction,* where physicians and nurses are proficient in teaching patients and training them in the standard routine, so that when they are discharged they are better able to continue their treatment at home. Patients do not get this training in private homes or boarding houses. It is only learned properly in Sanatoria.

Drugs occupy a secondary place in treating tuberculosis and are useful mainly in combating symptoms. It is estimated that 80 to 90 per cent of the drugs used in treating pulmonary tuberculosis consist primarily of sedative cough mixtures, all of which should be used cautiously.

Rest is essential in all cases of tuberculosis, and by this we mean complete relaxation, both mental and physical. Most patients think that bed rest produces weakness, and it is often difficult to get them to understand that while at rest, instead of burning up their energy, they are storing it up in their systems and building up a resistance from within which nature requires before her healing process can be started. It is often difficult to get cooperation from patients on many little points which they look upon as silly but which are highly important in getting results in the rest cure.

I shall touch lightly on climatic treatment. That some types of lesions will improve faster in one climate than in others is probably true. Pure air is of course essential. Crowded urban centers or factory districts where the air is contaminated with dust, smoke, and gases are to be avoided. All our states are now finding suitable locations within their own borders for sanatoria, and when properly staffed and supervised, they all get essentially the same results. Heliotherapy as a remedy for pulmonary tuberculosis has been greatly abused. The old adage that a little knowledge is dangerous applies here. Because some of the Sun's rays are known to be beneficial to some types of tuberculosis, mostly extrapulmonary lesions, the tendency in some quarters is to use sunshine indiscriminately. Sunshine is a powerful drug and an overdose is to be avoided as if it were strychnine or any other deadly poison. We often have patients come into the sanatorium who have spent a few weeks at the seashore. In order to be with the gang, or sometimes even on the advice of their physicians, they have spent several hours daily with the greater part of the body exposed to the sun. They become deeply tanned and are often burned until the epidermis has peeled off over large areas. They usually think they were doing the right thing, but when the stethoscope and x-ray have done their work, a sad state of affairs is often brought to light. The indiscriminate use of natural or artificial heliotherapy cannot be too severely condemned, for it has undoubtedly sounded the death knell of many an innocent sufferer from pulmonary tuberculosis. As to exercise, it is often hard to decide just when and how to regulate a patient's activities. There can be no standard in this matter since every patient has his own limitations and since it is better to err on the safe side and

prolong the period of absolute bed rest even longer than necessary than to make the mistake of letting him up the least bit too soon. In the beginning the reaction of every patient should be closely observed before increasing the exercise period.

In the matter of dieting, we are getting away from the old stuffing process in feeding our tuberculous patients. The idea of gorging a patient's stomach with a gallon of sweet milk and two or three dozen raw eggs daily is happily being discarded. A properly selected well balanced diet suited to each individual case is all that is necessary. An overloaded stomach is like an overloaded horse, soon tired out. I shall not elaborate on these various measures of treatment, but will pass on to the surgical treatment. In this field artificial pneumothorax stands out preeminently and I shall deal only with it in this paper, leaving phrenicectomy, apicolysis, thoracoplasty, etc., for the future. The story of pneumothorax reads like a romance. Air and fluid in the pleural cavity were known and written about in the days of Hippocrates and we have evidence, though meagre, that these ancients attempted to use it as a therapeutic measure even in those days; however, their methods were so crude, their cases so unsuitable, and their results so unsatisfactory that it soon fell into disuse and we hear very little about it until the early part of the 19th century. In 1803 Itard coined the word pneumothorax and applied it to these conditions which, prior to this time, were referred to as accidents and generally considered fatal. Undoubtedly, these conditions were what we know as spontaneous and were never induced for therapeutic effect. Carson in 1821 was probably the first to advocate the induction of pneumothorax in treating pulmonary conditions such as "abscess, consumption and hemorrhage." He induced two patients to submit to it at the hands of another surgeon, and both proved to be operative failures either because of adhesions or because of his method, which was to make an incision between the 6th and 7th ribs large enough to admit air freely. Aside from a few meagre references, the literature is silent until Forlanini of Pavia, Italy, who deserves credit for being really the first to bring this valuable method of treatment before the profession and who, in 1894 and 1895, reported a series of cases and later a much larger series. In 1898 Murphy of Chicago, Illinois, without knowledge of preceding work, was the first to practice the procedure in this country. Results at first were not encouraging, probably because overzealous operators attempted to collapse a lung entirely at one sitting and also because they did not select their cases for collapse properly. With better equipment and imprived technique artificial pneumothorax as a therapeutic measure began to come into its own by 1912, and now there is no question but that it offers us the best means known for combating *early* or *minimal pulmonary tuberculosis*. I use this last term advisedly; for here I believe most of our mistakes are made. It is quite true that within the last few years many more workers in this field than formerly are beginning to use pneumothorax in earlier stages of the disease. It is also quite true that many are still hesitating until the disease has progressed to the stage where the case is hopeless, and then it is tried only as a last resort. With our present knowledge of the disease and the effectiveness of pneumothorax as a remedy, these delays are inexcusable. Granted, that a few may during a comparatively short period of bed rest, develop a resistance sufficient to heal a small lesion, still I submit that they are few indeed. The dangerous part is that you do not know which case is going to respond favorably under this regime; and after it is too late, well, it is just *too late*. There can be only one excuse for these delays as I see it, and that is that a case has been mishandled and a correct diagnosis not made until it has reached a far-advanced stage.

As strong as my views are for pneumothorax in early or minimal cases, I do not want to be an extremist. An ideal case would, of course, be unilateral with a small lesion, not beyond the moderately advanced stage and without *cavitation*. I

wish to emphasize the word cavitation, because long experience has taught us that before cavitation takes place we rarely encounter adhesions, but *after* cavitation we are most *surely* going to find them. Results depend on the amount and extent of the adhesions, and when they are present we are often beaten before we start pneumothorax. This being the case, and adhesions being our greatest foe in obtaining an effective collapse by pneumothorax, why not start this treatment at a stage when we are least likely to encounter them? To use an aphorism: "Let us lock the barn *before* the horse is stolen." A word about adhesions: Are they not an effort of Mother Nature to immobilize a diseased lung? We know that the wise old lady starts her work at an early stage of the game; and if we accept nature as a guide, why not go and do likewise? Primarily, I had intended this paper to be a plea for the use of pneumothorax in early cases, believing as I do that this particular field has been sorely neglected. I have no data or statistics to report, but from close observation over a period of fifteen years in this work, I find the conclusion inescapable that the best results with pneumothorax are obtained in those cases where there has been least destruction of lung tissue. While the literature on the use of pneumothorax in minimal cases is scant, there have been a few who have reported on groups thus treated and so far as I have been able to follow them, results are much better than those in which pneumothorax was deferred until they had reached a moderately or far advanced stage.

One objection urged against pneumothorax in early cases is that we should wait until we are sure the disease is progressive. My first shot at this objection is that pulmonary tuberculosis is *notoriously progressive* in character and that any demonstrable lesion, however small, should be treated as *progressive*. It could never have reached a demonstrable stage if it were not progressive. It is, to say the least, potentially so, which means the same thing with regard to indications for treatment.

There are many reasons, in my judgment, for using pneumothorax in early cases more than is being done at present. Of necessity I can mention only a few at this time. First, the probability of encountering obstructive adhesions is reduced to a minimum. Second, the danger of complications, such as fluid and bronchopleural fistula is lessened. Again, by starting pneumothorax before extensive spread of the infiltration or destruction of lung tissue and the formation of large cavities, it will hardly be necessary to prolong the treatment more than a few months or a year at the most. Also, granted that the lesion is unilateral, as long as it is open, the danger of infecting the contralateral lung is ever present. Furthermore, by early compression our chances of having a more perfectly functioning lung after reexpansion are greatly increased. All this means that a patient would probably be able to resume his former activities at a much earlier date, thereby offsetting the time and expense which means so much to most patients. Tuberculosis being the insidious, deadly disease we know it to be and with its tendency to progress from bad to worse and often at a rapid pace, it surely behooves us to treat it, from the time a diagnosis is first made, in the most active, energetic manner, and with all the best means at our command. Our patients have the right to expect this. Procrastination is too dangerous to indulge in at any *stage* in fighting this disease. It is like waiting to see if an acute appendix is going to rupture before you remove it. If pneumothorax is effective (and we know that it is) in most moderately advanced and often far advanced cases, is it not reasonable to suppose that it would be *more so* in early or minimal cases? Much more could be said in favor of the use of pneumothorax in early or minimal cases. I am hoping that others will take it up, and that, in the meantime, enough interest will be aroused to induce workers in this field to give this proved remedy a more extensive trial in early minimal cases than it has had heretofore. I feel sure that results will not be disappointing.

Report of the Statistical Committee on Public Sanatoria

BY
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LAST year at the annual meeting in Kansas City your Statistical Committee submitted a report compiled from a questionnaire sent out to all the private tuberculosis sanatoria in the United States. The report was based on 64 replies out of 164 mailed, since the rest were either not returned or were not sufficiently complete to be included in the final report. This report was published in the August, 1936 issue of Diseases of the Chest.

This year, the home office of the Association, through the Statistical Committee, sent to all public sanatoria a questionnaire containing 17 questions. In all, questionnaires were mailed to 659 sanatoria, from which, after considerable follow-up work, 475 replies were received. In going over the returned questionnaires, we found that many of them had been sent to private institutions. We found also that a number of the replies were not sufficiently complete to be included. The total number of replies which were accepted to form the basis of this report was 348, of these, 22 were from Government hospitals, that is, those conducted by the Veterans' Bureau. These were classified separately, leaving 326 public sanatoria from which the replies are embodied in the major part of this report.

We found the total number of beds in these sanatoria to be 53,597. The maximum number in any one institution was 1206 and the minimum was 8. The average number of beds in these sanatoria was 164.

The number of vacant beds was 4,027. The greatest number in any one institution was 161. One hundred seventeen sanatoria reported no vacancies. The average number of vacancies was 12.

The reports showed that there were more than twice as many waiting to enter sanatoria as there were vacancies. Number reported as waiting was 9,428. The greatest number on any one waiting list was 995, with 127 public sanatoria without any waiting list. This made an average of 29 patients per institution as compared with an average of 12 vacant beds.

The waiting period varied from immediate acceptance to one year. In 123 institutions out of the 326, patients were accepted without delay, while there was one institution in which it took a year, and many in which it took as long as several months. The average was 27 days.

It is interesting to recall that in a similar survey of the private sanatoria made in 1935, of the 3,348 beds available in those institutions for tuberculous patients, 1182, or a little over one-third of the total number, were reported as vacant. There were five of the private sanatoria that had no vacancies, while 17 reported that 50 per cent or more of their beds were unoccupied.

The percentage of patients under collapse therapy varied greatly in the different public sanatoria. The maximum percentage was 93, while, on the other hand, there were 20 of these institutions which offered no collapse therapy at all. The average was 36 per cent. Collapse therapy was administered as follows: pneumothorax 29 per cent; phrenic paralysis 11 per cent; pneumolysis .1 per cent, thorocoplasty 4.38 per cent.

Altogether in these 326 sanatoria there were 5,372 who were listed as pay patients. Only 425 of this number paid $60.00 a month, while 943 patients paid more than $60.00, leaving a balance of 4,004 paying less than $60.00 a month. There was one county institution of 120 beds and 109 patients where the minimum amount any patient paid was $79.50.

The per diem cost of operation ranged from seventy cents per patient to $5.48, with an average daily cost of $2.36.

Sixteen of these sanatoria reported that they had no resident physician. The average number of resident physicians was 2.6, and the greatest number in any institution was 20.

In making a comparison of the reports sent in by the Government with those of

the other public sanatoria, we found a number of differences. For instance, the average Government hospital was larger, the per diem cost higher, and the length of the waiting time less except in the case of negro patients.

The total number of beds listed in the reports from the Government institutions was 10,250. The largest number in any one hospital was 1750, the smallest number 32, and the average 466, as compared with an average of 164 in the other public institutions.

Among these 22 Government sanatoria there were only four in which there were no vacancies. One had as many as 456 vacancies and the average was 70.

In like ratio, the average number of patients on the waiting list was much smaller. Although there were 643 patients awaiting admission, at least 355 of these were negroes. Seventeen Government sanatoria reported no waiting list at all.

The waiting period was proportionately shorter. The longest period reported was 45 days (in a negro institution), while the average was only 8.7 days. Half the institutions reporting accepted their patients as they applied.

The average percentage of collapse therapy was 26.3, distributed as follows: pneumothorax 20 per cent; phrenic paralysis 7.5 per cent; pneumolysis none; thorocoplasty 2.19 per cent.

The number of pay patients was inconsiderate.

The average per diem cost was $3.77, with a maximum of $5.00 and a minimum of $2.24. This minimum was in an institution caring for negroes.

Allergic Tracheitis

BY
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THE detection of pure asthmatic bronchitis is, of course, easy. Where the symptoms of allergic tracheal irritation accompany such an asthmatic bronchitis, diagnosis offers but little more difficulty. Where, however, the tracheal symptoms precede or intermit with a definite asthma or asthmatic bronchitis, the true allergic basis of the tracheal irritation is easily overlooked, and has been incorrectly ascribed, not infrequently in my experience, to other conditions, by chest specialists of the highest competence.

I am using this nomenclature "allergic tracheitis" to cover a definite symptomatology not infrequently seen in allergic practice. While in none of my cases has there been definite direct tracheal inspection, the absence of detectable pathology at the time in the lungs or in the nasopharynx, and the subsequent extension into the pulmonary field in the form of bronchial asthma, or an easily detectable asthmatic bronchitis, would indicate the trachea as the seat of the condition.

The symptomatology to which I am referring consists in a most annoying, persistent, dry, unproductive cough lasting for hours, and in severe cases, often preventing rest and sleep for one or two days, or to a lesser degree for even weeks. At times every breathing effort is accompanied by one or more cough reflexes. While the condition occurs in adults, it is far more frequent in children. I have seen youngsters in this state cough incessantly almost an entire night, driving parents and medical attendants nearly frantic. The cough in a measure resembles that produced by a tracheal foreign body (where there is no wheeze) or that caused by pressure on the trachea or some portion of the bronchial tree. Dyspnoea and pain are usually absent. Elevation of temperature may occur, but is usually absent. Sedatives or mild narcotics give little or only temporary relief. Physical examination of the chest is negative, and chest roentgenograms show nothing abnormal. Nose and throat examinations are negative in so far as the finding of any cough etiological factor unless a complicating acute paranasal sinusitis or upper respiratory tract infection exists for the time

being, usually not the case. Curiously enough, these cases, even though of allergic origin, often do not respond satisfactorily to ephedrine or to epinephrine either hypodermatically or by inhalation except at the onset. Ordinarily by the time the case is seen by the medical attendant or consulting allergy specialist, the tracheal irritation, due to several hours of incessant cough, maintains such cough unchanged.

Frank allergic rhinosis may or may not be present. Ordinarily it exists only to a slight degree when present, and is easily overlooked. The case may or may not have had evidences of bronchial asthma in the past, or such asthma usually has been limited to slight wheezing.

The diagnosis is made by:

1. The detection during diagnostic study at some time by physical examination of the usual evidences of asthmatic bronchitis, where the case has progressed to include the bronchial tree. This always occurs sooner or later. This detection may occur only after the case has been watched in and out of attacks for weeks or months.

2. The detection at some time during the period of observation of evidences of nasal allergy either by the nasal membrane appearance characteristic of such condition or by the finding of eosinophiles in the nasal secretion, if and when any secretion is present.

3. The permanent or semipermanent relief of the condition by usual antiallergic measures.

4. The production of the condition following the intentional or occasional overdosage of the antigenic factor actually at the bottom of the condition, which inadvertantly I have done several times while testing or treating these cases.

Very suggestive diagnostic points are a history of past or present allergy, and a history of allergy in the family. The condition may be occasional, seasonal or perennial, depending on the nature of the causal antigen.

The natural evolution of these cases is, after a variable period of time, often a year or more, obvious bronchial asthma. When the asthmatic state has been reached beyond a question of diagnostic doubt, periods of this cough will often alternate with periods of asthma, and often cause more annoyance and present more difficulty to relieve than the frank asthma. I have had mothers of asthmatic children in describing a new case of this type whom they have seen in my office reception room often use the statement "my child used to cough just like that before he had asthma."

Treatment: The permanent handling of such cases consists in the detection and correction of the offending allergic antigenic factors. The handling of the case during the acute "status" is very unsatisfactory on account of the frequent relief failure of ephedrine and epinephrine. Nausea and facility of vomiting increased by the cough is probably one cause of the inefficacy of ephedrine. Following the trial of ephedrine and epinephrine, codeine and similar preparations give a certain amount of relief to cases in which there exists no sensitivity to any of the opium derivatives. An elimination of usual allergic irritants — feathers, dust, odors and odoriferous local applications, and air currents in pollen cases by closing windows—is essential. In children, exhaustion finally produces rest and relief.

The importance of the detection and correction of this definite entity of allergic tracheitis is obvious.

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ORGANIZATION NEWS

The 1937 Pneumothorax Directory

Copies of the long delayed 1937 Pneumothorax Directory listing the members of the American College of Chest Physicians were placed in the mails on September 16th. The delay, this year, was caused by the change of the name of the Society from the Federation of American Sanatoria to the American College of Chest Physicians; and the time entailed in examining and clearing the many new applications received for membership. The Board of Regents examined and expedited the applications with the utmost of speed, so that the College would be able to publish a directory for the year of 1937.

The Board of Regents handled 190 applications for membership in the American College of Chest Physicians in less than six weeks, of which 142 were accepted and 48 were rejected. The rejections were mainly because of an insufficient length of time in the specialty of chest diseases. It is hoped that the rejected applicants will make re-application at the proper time. The total membership of the American College of Chest Physicians for the year of 1937 is 452 physicians from 42 States, the District of Columbia, and Hawaii.

The members of the Board of Regents are:

Frank Walton Burge, M.D., Philadlephia, Pa.; Chairman.
Ralph C. Matson, M.D., Portland, Oregon; Vice-Chairman.
H. Frank Carman, M.D., Dallas, Texas.
McLeod M. George, M.D., Denver, Colorado.
Benjamin Goldberg, M.D., Chicago, Illinois.
Edward W. Hayes, M.D., Monrovia, California.
John N. Hayes, M.D., Saranac Lake, N. Y.
Champ H. Holmes, M.D., Atlanta, Georgia.
Jay Arthur Myers, M.D., Minneapolis, Minn.
Edward J. O'Brien, M.D., Detroit, Michigan.
Victor S. Randolph, M.D., Phoenix, Arizona.

The Sanatorium Committee.

The Sanatorium Committee of the American College of Chest Physicians announces that it has prepared a questionnaire which is being mailed monthly to the private sanatoria throughout the country to ascertain the number of beds available in those institutions for the care of the tuberculous, the number of vacant beds in those institutions from month to month, and the number of patients in private sanatoria receiving some form of collapse treatment. These questionnaires are mailed on the first of each month and are to cover a report of the preceding month.

The results of this survey will be embodied in a report to be released by the Sanatorium Committee at the next annual meeting of the American College of Chest Physicians.

The members of the Sanatorium Committee are:

Louis Mark, M.D., Columbus, Ohio; Chairman.
Benjamin A. Shepard, M.D., Oshtemo, Michigan; Vice-Chairman.
Alexius M. Forster, M.D., Cragmor, Colorado.
Charles R. Gowen, M.D., Shreveport, La.
Robt. G. McCorkle, M.D., San Antonio, Texas.
George Thomas Palmer, M.D., Springfield, Ill.
Ralph B. Scheier, M.D. San Francisco, Calif.
Frederick A. Slyfied, M.D., Seattle, Washington.
Everett E. Watson, M.D., Salem, Virginia.

Texas Members of the College to hold Luncheon Meeting at Adolphus Hotel, Dallas, November 1st.

The members of the American College of Chest Physicians in the State of Texas will meet for a luncheon at the Adolphus Hotel on Monday, November 1st; at which time they will participate in a "Round Table Conference."

The Conference is being held jointly with the annual meeting of the Texas Public Health Association, which will take place this year at Dallas, November 1, 2, and 3.

Dr. George W. Cox, State Health Commissioner has announced that a paper will be presented by Dr. Arthur Burns, Controller of Tuberculosis in the State of Texas entitled, "Tuberculosis Control in Texas." The members of the American College of Chest Physicians will discuss this paper along with other matters affecting the Tuberculosis Specialists in the State of Texas. Dr. H. Frank Carman, Dallas, is the Chairman for the Conference.

Society Notices.

Dr. Herbert L. Mantz, Kansas City, Missouri, a Fellow of the American College of Chest Physicians will present a paper on "How to Perform and Properly Evaluate the Tuberculin Test" at the Fifteenth Annual Fall Clinical Conference of the Kansas City Southwest Clinical Society to be held at the Municipal Auditorium, October 4, 5, 6, and 7. Dr. Mantz's paper will be presented on the morning of October 5th.

Dr. Alfred R. Matson, Denver, Colorado, a Fellow of the American College of Chest Physicians presented a paper entitled, "Tuberculosis Control in Colorado" at the Sixty-seventh Annual Meeting of the Colorado State Medical Society, held at Colorado Springs, Colorado, on September 22-25.

The Following Fellows of the American College of Chest Physicians are on the program of the Southern Tuberculosis Conference to be held at Richmond, Virginia, September 29, 30, and October 1st. John Donnelly, M.D., Charlotte, N. C.; Champ H. Holmes, M.D., Atlanta, Georgia; Paul A. Turner, M.D., Louisville, Kentucky; Paul H. Ringer, M.D., Asheville, N. C.; Dean B. Cole, M.D., Richmond, Virginia; W. Atmar Smith, M.D., Charleston, S. C.; Edward J. Murray, M.D., Lexington, Kentucky; Jay Arthur Myers, M.D., Minneapolis, Minn.; L. J. Moorman, M.D., Oklahoma City, Oklahoma; Carl C. Aven, M.D., Atlanta, Georgia; and E. C. Brunner, M.D., Miami, Florida.

Dr. Ralph C. Matson, Portland, Oregon; a Fellow of the American College of Chest Physicians presented a paper entitled, "Closed Method of Intrapleural Pneumonolysis" at the Mississippi Valley Tuberculosis Conference held at Dayton, Ohio, September 22-25. Dr. Jay Arthur Myers, Minneapolis, Minnesota; President of the National Tuberculosis Association and a Fellow of the American College of Chest Physicians addressed the meeting.

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A Report on the Jewish Consumptive Relief Society, Denver, Colorado

BY
Lewis I. MILLER, M.D.
Chairman, Medical Advisory Board; Secretary, Board of Directors

IN a statistical study of over 33 years it has been revealed that the Sanatorium of the Jewish Consumptives' Relief Society at Denver is one of the safest places in the world in which to work. There has not been a single case of tuberculosis developed in a healthy employee during its entire existence. This is ample evidence of the efficacy of the Sanatorium type of treatment for pulmonary tuberculosis.

It is possible that the high dry altitude, the germicidal activity of the western sun rays and the pure mountain air have all played their part in lessening the spread and in preventing the development of tuberculosis.

To its patients, the Jewish Consumptives' Relief Society of Denver is not only a Sanatorium but a real home. The curative importance of a home-like atmosphere is one of our cardinal principles. The J. C. R. S. spirit has become a household word.

The educational, recreational and social activities of the Denver Sanatorium are varied: A library containing 9,000 volumes in all important languages, caters to the literary tastes of the patients. A house of worship answers their spiritual needs.

The absence of red tape is another fundamental policy of the Society. Altho the institution is 100 per cent free, and admits only indigent patients regardless of creed, the attitude of the organization to its patients is one of democratic kindness.

Almost 10,000 patients have been admitted to the institution since it was founded in 1904. These individuals came from most every state in the United States and from Canada. However, over 50 per cent came from the metropolitan area of New York City.

Little is known concerning the ultimate results of sanatorium treatment of tuberculosis. Only a very few sanatoria follow each patient after he is discharged. It is obvious that the success or failure of medical or surgical treatment is measured by its end results. The Sanatorium of the Jewish Consumptives' Relief Society has for thirty odd years collected valuable statistical data concerning patients who have regained their health and who have been returned to economic usefulness. The intricate sanatorium follow-up system has received replies from patients who have migrated to such distant points as Palestine, Russia, Egypt, England, France and other foreign lands.

The Sanatorium and its grounds, which has been said resembles the campus of a college, is worthy of the name "House of Learning" as well as "House of Healing."

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